

Taking the measure of product development

Is the way you measure product-development performance harming your company's health? New research suggests that it might be.

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For something so fundamentally important to a company's success, product development is notoriously tricky to manage. In part, that's because R&D activities require companies to juggle so many dimensions. They must balance new features and innovative technologies against cost, risk, and time to market. They must consider how well they are meeting the needs of customers with varying requirements. And they must understand how new products will fit into their existing portfolio, and how they stack up against competitor offerings.

Companies also must ensure they are making the right use of limited resources, allocating people, time, and money to the projects that will best meet their short- and long-term strategic goals. That raises a crucial question: how should they measure the performance of their product-development teams?

By themselves, metrics aren't a solution to product-development challenges, but the key performance indicators (KPIs) companies use do show where management is focusing its attention. That led us to wonder about the relationships between what companies track in product development and how they perform.

To investigate this issue, we conducted a new analysis to compare companies' use of different product-development KPIs and their overall financial performance. We based the work on ten years of data collected through the McKinsey Product Development Fingerprint, a proprietary product-development diagnostic tool.

This research is at an early stage. Our dataset comprises 42 companies, for which detailed data on product-development metrics and financial performance was available. Nevertheless, the work reveals a number of intriguing and potentially counterintuitive findings.

Potential trade-offs between growth and stability

In our analysis, we considered a company to be "using" a metric if it was cited by more than one-third of staff interviewed. That's important, because widespread knowledge of a metric indicates that the company is using that indicator actively as part of its performance-management processes.

We correlated the use of selected metrics with two measures of financial performance. The first was **relative-profit growth**, based on profit growth at the company in the year the data was collected, compared to the average for its sector. The second was **profit-growth stability**, which quantifies the variability of profit growth over a ten-year period, again in comparison to the sector average. For full details of our data set, and how we analyzed it, see sidebar, "Linking product-development metrics to financial performance."

Product-related metrics: focus on today, keep one eye on the future

More than three-quarters of companies in our sample made widespread use of product volume, revenue, unit cost, and time-to-market KPIs. The majority also have metrics in place to measure the reliability of their manufacturing operations. That puts these "product-related" metrics among the most commonly used across our sample. And, on our short-term measure, companies that use these metrics perform better than the minority that don't.

When we looked at profit-growth stability, however, a different picture emerged. Over a ten-year period, the benefits of tracking product-focused metrics disappeared, suggesting a different focus becomes increasingly important as time passes. One possible explanation for this finding is that some organizations are sacrificing

Linking product-development metrics to financial performance

For almost a decade, the McKinsey Product Development Fingerprint diagnostic has gathered data based on in-depth assessments of companies' product-development practices and outcomes. The fingerprinting approach has now been applied to more than 500 projects at around 130 organizations. One element of the diagnostic involves structured interviews with staff from all parts of the R&D function, who are asked about the metrics their organization uses to monitor product-development activities.

For our new analysis, we selected 42 companies from the Fingerprint database, choosing those with both a good dataset on the metrics in use, and publicly available data on financial performance over the ten-year period from 2007 to 2016.

In our analysis, we considered a company to be “using” a metric if the metric was cited by at least one-third of participants in the diagnostic interview phase. That's important, because widespread knowledge of a metric indicates that the company is using that indicator actively as part of its performance management processes.

The Fingerprint survey is retrospective: It asks participants to comment on practices and metrics used in a specific, recently completed project.

To estimate the correlation between each organization's KPIs and its overall financial performance, we created a new metric of our own, taking the company's profit growth for the year after its participation in the Fingerprint and subtracting the average profit growth for companies in its sector. For companies that outperformed their sector, this index of **relative-profit growth** would be positive, and the better their performance, the higher it would be.

We also wanted to look at the relationship between product-development metrics and profitability over the longer term. In particular, we wanted to identify the approaches used by companies that achieve consistent high performance. To do this, we designed a second metric. To create our ten-year index of **profit-growth stability**, we calculated each company's relative-profit growth for every year between 2007 and 2016, then divided the sum of these values by their standard deviation. The larger and more stable a company's profit growth over the analysis period, the higher this figure would be.

To study the impact of individual KPIs on short- and long-term financial performance, we compared the average of each of our two metrics for companies that used a given indicator with the average for those that did not.

long-term performance in the pursuit of short-term objectives, for example by working hard to get the next product into the market without sufficient attention to the development of a broad portfolio, or to the technologies and strategies that will underpin future product generations (Exhibit 1).

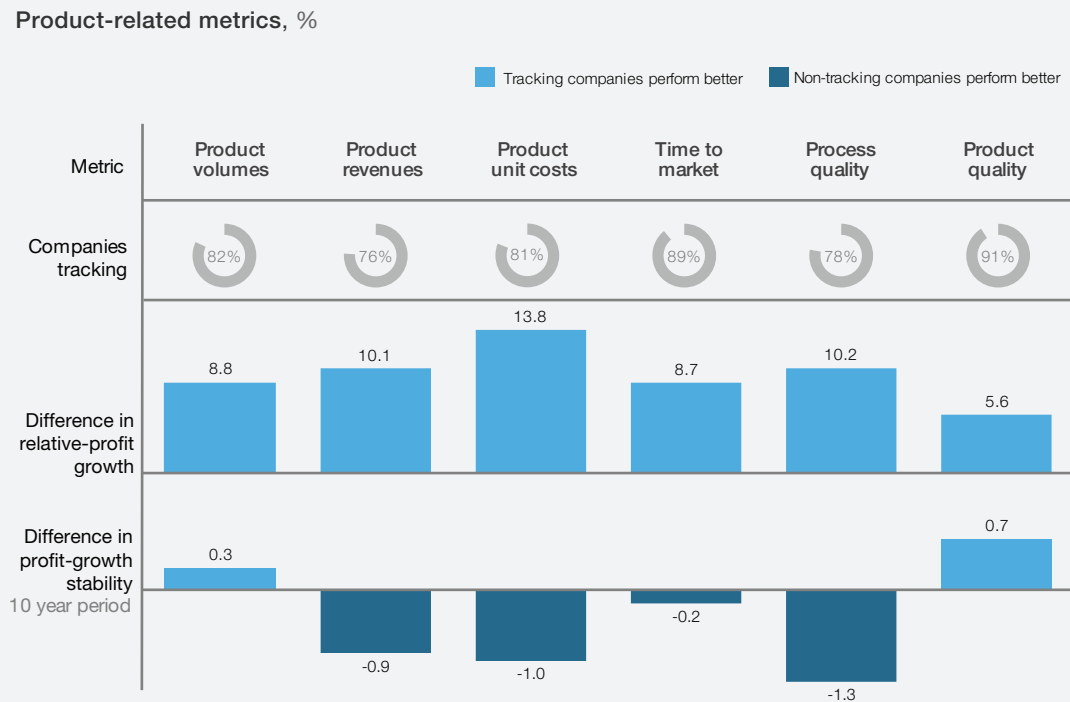
Customer-related metrics: value matters

While the majority of the companies in our sample monitor customers’ satisfaction with product performance, only 44 percent of them measure customers’ satisfaction with the price they paid for

the value they received. Our analysis suggests that this is a measure that deserves more attention, since it is strongly correlated with both short-term profit growth and long-term stability. Indeed, the average relative-profit growth of the companies that did use this metric was 12.9 percentage points higher than those that did not (Exhibit 2).

Over the long term, two customer-related metrics were associated with profit-growth stability: customer satisfaction with price for value and product performance against its specification.

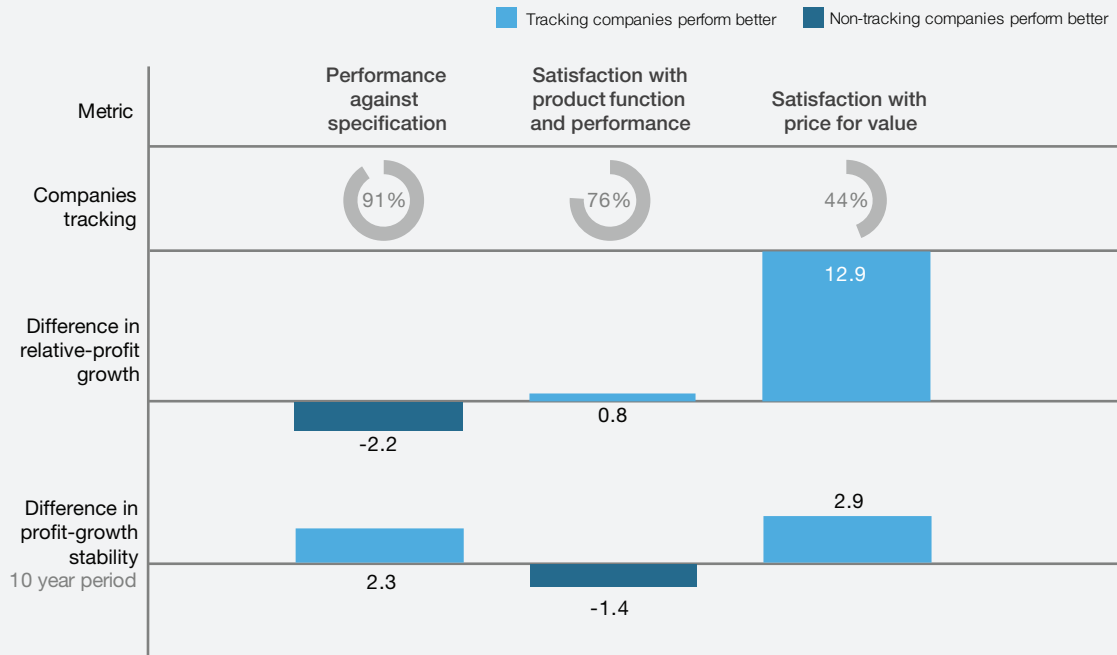
Exhibit 1 Product-related metrics correlate with short-term strength, but long-term weakness.



Source: McKinsey Product Development Fingerprint

Exhibit 2 Customer satisfaction: Value for dollar matters even more than product performance.

Customer-related metrics, %



Source: McKinsey Product Development Fingerprint

This makes intuitive sense, as understanding your customer’s real requirements, delivering on your promises, and offering strong value for money are good ways to build reputation and customer loyalty.

Supplier-related metrics: who delivers the best ideas?

The use of metrics related to supplier performance was less widespread in our sample. In particular, only one-third of companies measure innovations that were developed by or with their suppliers and partners. The use of this type of metric was strongly associated with both relative-profit growth and profit-growth stability. For example, companies

that measure suppliers’ innovation performance show an average short-term profit growth that’s 15.4 percentage points higher than the rest (Exhibit 3).

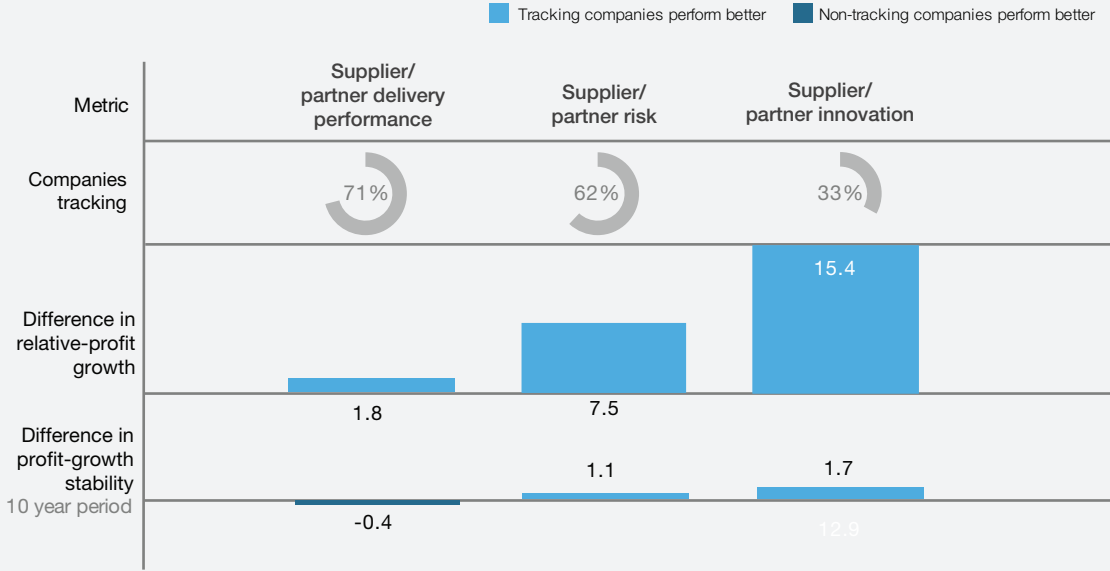
Across industries, innovative ideas and enabling technologies are increasingly likely to come from outside the organization. Companies that measure their effort to identify and exploit external innovation are more likely to get better at it.

Team morale: short-term pain, long-term gain

Only 39 percent of the companies in our sample take a systematic approach to measuring project-team morale. This metric delivered an ambiguous

Exhibit 3 In measuring suppliers, innovation and risk make more difference than delivery performance.

Supplier-related metrics, %



Source: McKinsey Product Development Fingerprint

result: In the short term, it is associated with poorer relative-profit growth, but over the long term, it is linked with better profit-growth stability.

That could indicate a trade-off between performance and health. Companies that work their product-development teams harder might squeeze better results from them in the short term, but product development is a marathon, not a sprint. Healthier teams may be better-equipped to regroup and produce good results, project after project, year after year.

Budget adherence: false economy?

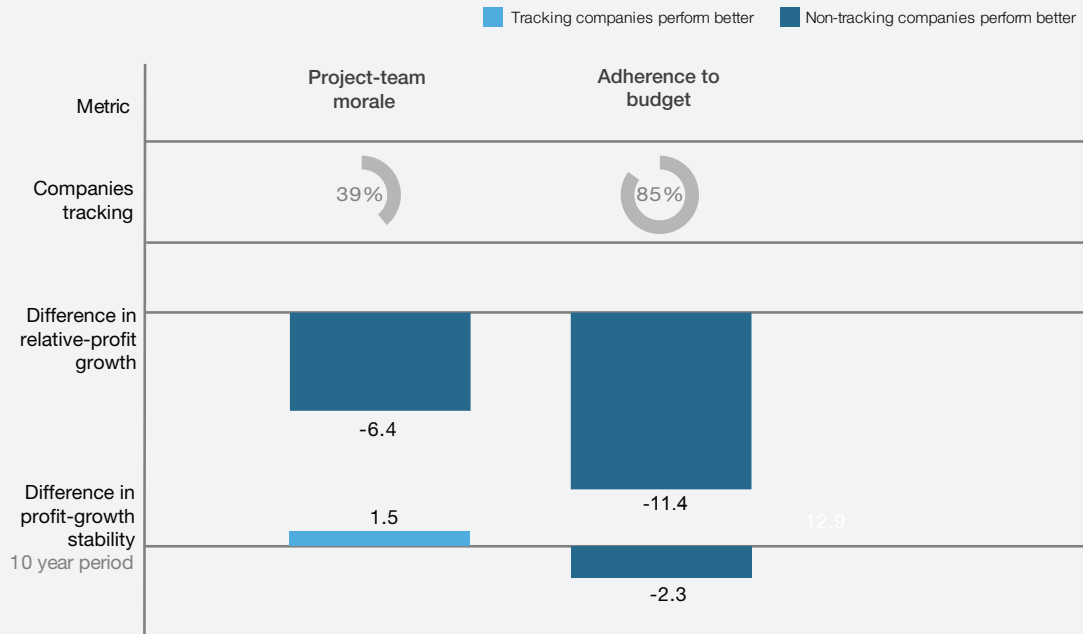
The most intriguing result of our analysis is one that should give every R&D leader pause for thought.

The variable with the most significant negative correlation with short-term financial performance was budget adherence. Only 15 percent of the companies in our sample *did not* make widespread use of this metric, but those companies had an average relative-profit growth 11.4 percentage points higher than the remaining 85 percent. Moreover, budget adherence was also the only metric to show a significant negative correlation with both short-term profit growth and long-term stability (Exhibit 4).

This finding should not be interpreted as a suggestion that companies stop tracking their R&D project budgets, but it may have important implications for the way budgets are used.

Exhibit 4 A morale focus pays off over time, but too heavy a budget focus costs in both the short and long term.

Other metrics, %



Source: McKinsey Product Development Fingerprint

Remember that “use” of a metric by a company indicates that it was cited by more than a third of respondents from that organization. In practice, every company we surveyed was collecting data on budget adherence. In a few of them, however, that fact was not widely known, suggesting that these companies were not using the metric as an active management tool. Our hypothesis here is that freeing R&D teams from excessive pressure to ensure budget compliance enables them to be more flexible, effective, and innovative. Product development is inherently risky and unpredictable: no plan survives contact with the enemy. Freeing teams from strict budgetary limits may lead to product designs that perform better in the market.

The takeaways

For product-development leaders, our analysis offers some important insights. In the short term, companies looking to accelerate their profit growth are wise to focus on the classic metrics that most already use, such as volumes, revenues, unit costs, time to market and process discipline. Over the long term, however, companies should also measure the things that build customer loyalty, such as satisfaction with a product’s performance, price, and specifications. And they should think about their people, understanding team morale and working to address the issues they find. As partners and suppliers play an ever more important role in product-development and innovation

activities, a systematic approach to developing these relationships provides benefits in both the short and long-term.

Finally, every organization should think hard about the way product-development budgets are used. That doesn't mean abandoning budgeting altogether, although that approach has worked well for some.¹ Instead, they should ensure that product-development teams aren't shackled by budgetary constraints, leaving them sufficient freedom to take risks, alter course, and pursue ambitious innovation. ■

¹ Jeremy Hope and Robin Frasier, "Who needs budgets?" *Harvard Business Review*, February 2003, hbr.org.

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